

Remarks

1. Summary of Office Action

In the Office Action mailed September 8, 2004, the Examiner rejected claims 1-4, 7-9, 11-13, 15-20, 23, and 24 under 35 U.S.C. § 103(a) as being obvious over a combination of U.S. Patent No. 6,269,243 (Corbefin), U.S. Patent No. 4,916,460 (Powell), and U.S. Patent Application No. 2002/0094829 A1 (Ritter). In addition, the Examiner rejected claims 5, 6, 10, 18, and 21 under 35 U.S.C. § 103(a) as being obvious over a combination of Corbefin, Powell, Ritter, and U.S. Patent No. 5,559,865 (Gilhousen). Finally, the Examiner rejected claims 14 and 22 under 35 U.S.C. § 103(a) as being obvious over a combination of Corbefin, Powell, Ritter, and JP408167786A (Mashida).

2. Status of Claims

Applicant has amended independent claims 1, 7, 15, and 23 to recite the invention more particularly, as fully supported by Applicant's specification. Applicant has also amended claim 4 to correct a minor typographical error.

Presently pending in this application are claims 1-24 of which claims 1, 7, 15, and 23 are independent and the remainder of claims are dependent.

3. Response to § 103 Rejections

a. Independent Claims 1, 7, 15, and 23 and Dependent Claims 2-4, 8, 9, 11-13, 16-20, and 24

As noted above, the Examiner rejected claims 1-4, 7-9, 11-13, 15-20, 23, and 24 as being obvious over a combination Corbefin, Powell, and Ritter.

According to M.P.E.P. § 2143, in order to establish the required *prima facie* case of obviousness of a claimed invention by applying a combination of references, the proposed combination must teach or suggest all of the elements of the claimed invention. Applicant

respectfully traverses the rejections of claims 1-4, 7-9, 11-13, 15-20, 23, and 24, because the combination Corbefin, Powell, and Ritter fails to disclose or suggest all of the claim limitations of any of these claims.

Applicant's invention is directed to a system and method for providing wireless communication services to a passenger compartment of an aircraft in such a way that potential interference with sensitive equipment on-board the aircraft, such as a flight and control system often located in a cockpit area, is minimized.

In this regard, each of independent claims 1, 7, 15, and 23, as amended above, recites in various ways the element of: a cabin antenna (located in a passenger compartment of an aircraft), wherein (i) the cabin antenna is oriented such that a *transmission pattern* of the cabin antenna *is substantially directed away from a cockpit area* of the aircraft to minimize interference with a flight and control system of the aircraft, the flight and control system being substantially located in the cockpit area, and wherein (ii) the cabin antenna is *additionally configured with a high front-to-back ratio to substantially minimize back lobe energy directed toward the cockpit area*, thereby further reducing interference to the flight and control system of the aircraft.

Applicant respectfully submits that the proposed combination of Corbefin, Powell, and Ritter does not teach or suggest at least these claimed limitations.

In general, the primary Corbefin reference teaches a system for allowing the use of a personal radiocommunication means (e.g., a mobile telephone) inside an aircraft. The system includes, among others, an external antenna for transmitting and picking up signals to/from outside networks, as well an antenna inside the aircraft for transmitting and picking up signals

to/from a passenger's radiocommunication means. (See Corbefin, e.g., at col. 2, lines 12-33, and Fig. 1.)

At best, Corbefin addresses potential danger of interference to electronic systems on-board an aircraft *but* does so in an entirely *different way* than presently claimed by Applicant. Specifically, as disclosed, Corbefin's system is equipped with a transponder unit that includes means of authority to direct (or compel) a passenger's radiocommunication means (e.g., a portable terminal) to operate at a reduced power. This way, as disclosed by Corbefin, any passenger can use a portable terminal "under the same conditions of service as if he were located on land in his office or his car, and do so without danger of interference with on-board electronic systems, since the operating power of such radiocommunication means is lowered in such a way as not to allow such interference." (See Corbefin, e.g., at col. 2, lines 34-42, and also at col. 4, lines 43-50.)

Thus, to the extent relevant, Corbefin proposes a system in which danger of potential interference with an aircraft's on-board electronic systems is reduced through the *control of operating power of a passenger's communication device*. Corbefin, however, does not teach or suggest a cabin antenna specifically configured in the manner presently claimed by Applicant in order to minimize interference to an aircraft's flight and control system substantially located in a cockpit area of the aircraft. Further, Applicant submits that Powell and Ritter fail to make up for the deficiencies of Corbefin in this regard.

Powell merely describes a distribution system including a primary antenna and secondary antennas, and a fiber optic network connected between the primary antenna and the secondary antennas. In turn, Ritter teaches a communication system for use in a vehicle (e.g., an aircraft, as recognized by the Examiner).

More particularly, the system according to Ritter can be employed in a vehicle to communicate various types of information, such as data transmitted through a mobile radio network, to passengers inside the vehicle. In this regard, Ritter discloses that a plurality of transceivers can be placed within the passenger compartment (*see* Fig. 1) to communicate signals to and from the passengers. Additionally, in the passage cited by the Examiner (*see* col. 1, paragraph [0020]), Ritter discloses that each transceiver has an antenna oriented within the vehicle and in the direction of the passengers.

Applicant, however, respectfully submits that this general disclosure of an antenna being oriented in the direction of a passenger does not constitute the specific disclosure of the presently claimed element of: a cabin antenna (located in a passenger compartment of an aircraft), wherein (i) the cabin antenna is oriented such that a *transmission pattern* of the cabin antenna is *substantially directed away from a cockpit area* of the aircraft to minimize interference with a flight and control system of the aircraft, the flight and control system being substantially located in the cockpit area, and wherein (ii) the cabin antenna is *additionally configured with a high front-to-back ratio to substantially minimize back lobe energy directed toward the cockpit area*, thereby further reducing interference to the flight and control system of the aircraft.

Indeed, a person skilled in the art would recognize that, without proper orientation and/or antenna design as required by Applicant's invention, the antenna element generally disclosed in Ritter could have a portion of transmission pattern directed outside the passenger compartment and towards other parts of the vehicle (e.g., a cockpit area on an aircraft) where equipment sensitive to interference might be located. This would be inconsistent with Applicant's claimed invention.

Further, Applicant respectfully submits that Ritter also fails to teach or suggest the claimed limitation of substantially minimizing antenna's back lobe energy directed toward a cockpit area by configuring the cabin antenna with a high front-to-back ratio (as defined in the antenna art). Advantageously, with Applicant's claimed invention, by minimizing the antenna's back lobe energy directed toward the cockpit area, any potential interference (due to the back lobe energy) to the flight and control system of the aircraft located in the cockpit area can be *further* reduced.

Because the combination of Corbefin, Powell, and Ritter fails to disclose or suggest all of the claim limitations of any of claims 1, 7, 15, and 23, as amended above, a *prima facie* case of obviousness does not exist. Therefore, Applicant respectfully submits claims 1, 7, 15, and 23 are in condition for allowance.

Each of claims 2-4, 8, 9, 11-13, 16-20, and 24 depends ultimately on a respective one of independent claims 1, 7, 15, and 23 and incorporates all of the elements of respective claim 1, 7, 15, or 23. Thus, by virtue of this dependence, Applicant submits that claims 2-4, 8, 9, 11-13, 16-20, and 24 are also in allowable form.

b. Dependent Claims 5, 6, 10, 18, and 21

As further noted above, the Examiner rejected claims 5, 6, 10, 18, and 21 under 35 U.S.C. § 103(a) as being obvious over a combination of Corbefin, Powell, Ritter, and Gilhousen. Applicant respectfully traverses these rejections, because the combination of Corbefin, Powell, Ritter, and Gilhousen fails to teach or suggest each and every element of any of claims 5, 6, 10, 18, and 21, as would be required to establish a *prima facie* case of obviousness under M.P.E.P. § 2143.

Each of claims 5, 6, 10, 18, and 21 ultimately depends from either claim 1, 7, or 15 and therefore incorporates all of the limitations of respective claim 1, 7, or 15. As discussed above, neither Corbefein nor Powell nor Ritter, separately or in combination, teaches or suggests the invention as recited in any of claims 1, 7, or 15. Therefore, neither Corbefein nor Powell nor Ritter, separately or in combination, teaches or suggest the invention as recited in any of claims 5, 6, 10, 18, and 21.

Further, Applicant respectfully submits that Gilhousen fails to overcome the deficiencies of Corbefein, Powell, and Ritter described above.

Namely, Gilhousen fails to teach or suggest the element of: a cabin antenna (located in a passenger compartment of an aircraft), wherein (i) the cabin antenna is oriented such that a transmission pattern of the cabin antenna is substantially directed away from a cockpit area of the aircraft to minimize interference with a flight and control system of the aircraft, the flight and control system being substantially located in the cockpit area, and wherein (ii) the cabin antenna is additionally configured with a high front-to-back ratio to substantially minimize back lobe energy directed toward the cockpit area, thereby further reducing interference to the flight and control system of the aircraft.

Applicant does not concede that the representations made more specifically by the Examiner with respect to dependent claims 5, 6, 10, 18, and 21 are correct. However, Applicant submits that those other points are moot in view of the fact that the cited combination fails to teach or suggest the invention as recited in any of parent claims 1, 7, and 15.

c. Claims 14 and 22

The Examiner rejected claims 14 and 22 under § 103(a) as being unpatentable over a combination of Corbefein, Powell, Ritter, and Mashida. Applicant respectfully traverses

rejections of claims 14 and 22, because the combination of Corbefin, Powell, Ritter, and Mashida fails to teach or suggest each and every element of these claims as would be required to establish a *prima facie* case of obviousness under M.P.E.P. § 2143.

Each of claims 14 and 22 ultimately depends on claim 7 or 15 and necessarily incorporates all of the limitations of respective claim 7 or 15. As discussed above, neither Corbefin nor Powell nor Ritter, separately or in combination, renders the invention of any of claims 7 and 15 obvious. Therefore, neither Corbefin nor Powell, separately or in combination, renders the invention of any of dependent claims 14 and 22 obvious. Further, Applicant respectfully submits that Mashida fails to overcome the deficiencies of Corbefin, Powell, and Ritter described above.

Namely, Mashida fails to teach or suggest the element of: a cabin antenna (located in a passenger compartment of an aircraft), wherein (i) the cabin antenna is oriented such that a transmission pattern of the cabin antenna is substantially directed away from a cockpit area of the aircraft to minimize interference with a flight and control system of the aircraft, the flight and control system being substantially located in the cockpit area, and wherein (ii) the cabin antenna is additionally configured with a high front-to-back ratio to substantially minimize back lobe energy directed toward the cockpit area, thereby further reducing interference to the flight and control system of the aircraft.

Applicant does not concede that the representations made more specifically by the Examiner with respect to dependent claims 14 and 22 are correct. However, Applicant submits that those other points are moot in view of the fact that the cited combination fails to teach or suggest the invention as recited in any of parent claims 7 and 15.

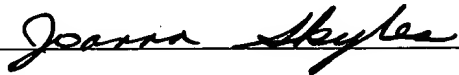
4. Conclusion

In summary, Applicant respectfully submits that each of pending claims 1-24 is allowable. Favorable reconsideration and allowance is requested.

Respectfully submitted,

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Date: December 2, 2004

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